

**REMARKS**

Claims 11-20 were previously pending in the application. This Amendment amends claim 11. Claims 12-20 remain unchanged. Claim 11 is independent.

Entry of this Response is proper because it does not raise any new issues requiring further search by the Examiner, narrows the issues on appeal, and is believed to place the present application in condition for immediate allowance.

**The Double Patenting Rejection under 35 U.S.C. § 101**

Claims 11 and 12 provisionally are rejected under 35 U.S.C. 101 as allegedly claiming the same invention as that of claims 11 and 12 of copending Application No. 10/583,636.

In the present application, claim 11 defines a dishwasher including a system for recognition of the fluid level of the washing fluid contained in the dishwasher. In contrast, claims 11 and 12 of the co-pending application reference a system for recognition of the fluid level of the rinsing fluid in the dishwasher.

Thus, claims 11 and 12 of the present application are not coextensive in scope with claims 11 and 12 of copending Application No. 10/583,636.

Applicants respectfully request withdrawal of this rejection.

**The Drawing Objections**

The drawings are objected to under 37 CFR 1.83(a) as allegedly failing to show every feature in identified in the drawings.

Applicants respectfully traverse these objections.

With regard to the objection to the drawings, Applicants respectfully submit that every feature of the invention specified in the claims is shown in the drawings. Fig. 1 is a cross section through a part of the sump of a dishwasher.

The specification describes that the sump forms the lower part of the washing container in which the washing fluid contained in the dishwasher collects.

With respect to claim 11, the Office Action asserts that the subject matter of the washing container, structure for introduction of cleaning agent, and fluid carrier are not shown in the drawings. The present application very clearly illustrates exemplary embodiments of the features.

For example, the elevation in the sump 1 in the dishwasher illustrates a part of the washing container. The side wall 2 also is part of the washing container. See, e.g., paragraphs [021] and [024]. Thus, these claimed features very clearly are illustrated in the drawings.

With respect to claim 16, the Office Action asserts that the subject matter of the base of the container and where the sensor is located are not shown in the drawings. As explained above, the present application very clearly illustrates the elevation in the sump 1 in the dishwasher illustrates a part of the washing container. The side wall 2 also is part of the washing container. See., e.g., paragraphs [021] and [024].

Regarding where the sensor is located, Figure 1 of the present application very clearly illustrates the filling level sensor 4 and the sensor probes 8. Thus, these claimed features very clearly are illustrated in the drawings.

With respect to claim 18, the Office Action asserts that the subject matter of the shape of the sensor is not shown in the drawings. Claim 18 does not recite a shape of the sensor. Therefore, the Office Action has not established which features of the claim allegedly are not illustrated in the drawings.

The features of claim 18 very clearly are illustrated in the drawings.

Applicants respectfully request withdrawal of this objection.

With respect to claim 19, the Office Action asserts that the subject matter of the spray arm, the relationship with the sensor, and how the sensor is protected are not shown in the drawings.

The alleged features of the spray arm, the relationship with the sensor, and how the sensor is protected are not recited in claim 19. Therefore, the Office Action has not established which features of the claim allegedly are not illustrated in the drawings.

The features of claim 19 very clearly are illustrated in the drawings.

Applicants respectfully request withdrawal of this objection.

**The Rejections under 35 U.S.C. § 112, first paragraph**

The Office Action rejects claim 11 under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement.

Particularly, the Office Action asserts that claim 11 contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. The Office Action asserts that the previous amendments to claim 11 require "a washing step, rinsing step and a drying step, wherein the washing step includes introduction of a cleaning agent and a fluid carrier forming a washing fluid and the rinsing step includes an introduction of a rinsing fluid". However, the Office Action asserts that no support is found in the original or amended specification to provide support for the amendment to the claims.

Applicants respectfully traverse this rejection.

M.P.E.P. § 2163.02 sets out the standard for complying with the written description requirement of 35 U.S.C. § 112, first paragraph:

"An objective standard for determining compliance with the written description requirement is, "does the description clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed. [...] to satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed."

Whenever the issue arises, the fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed. [...] An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention.

Without conceding this contention, claim 11 has been amended to delete the drying step.

Applicants respectfully submit that the original disclosure and figures convey with reasonable clarity to those skilled in the art that the features of claim 11 were in possession of the Applicants, as of the filing date. The features of claim 11 very clearly are supported by the original disclosure and this rejection should be withdrawn.

Claim 11 recites at least one washing container for receiving items to be handled, with the items to be handled being subjected to an operative handling cycle including at least one of a washing step and a rinsing step wherein the washing step includes introduction of a cleaning agent and a fluid carrier forming a washing fluid and the rinsing step includes introduction of a rinsing fluid.

The specification very clearly describes the manner in which the present invention provides non-contact filling level recognition in which the washing fluid and the filling level sensor do not come into contact with each other, and also in which the rinsing fluid and the filling level sensor do not come into contact with each other. See, e.g., paragraphs [002]-[004], [007], [008], [015]-[017], [022], [024], and [027].

Moreover, the specification clearly discloses flushing washing fluid around the washing container and the dome of the washing container, as well as spraying the washing fluid onto the overhanging roof 3 of the washing container during a washing operation. See, e.g., paragraphs [024] and [027].

One of ordinary skill in the art certainly would know and understand that a dishwasher includes a washing step that includes introduction of such washing fluid or cleaning agent, and a rinsing step that includes introduction of such rinsing fluid, after reading the present application.

Thus, the features of claim 11 very clearly are described in the specification in such a way as to convey with reasonable clarity to those skilled in the art that the features of claim 11 were in possession of the Applicants, as of the filing date.

For at least these reasons, claim 11 clearly is supported by the original disclosure, and therefore, certainly complies with the written description requirement.

Applicants respectfully request withdrawal of this rejection.

### **The Claimed Invention**

An exemplary embodiment of the claimed invention, as recited by, for example, independent claim 11, is directed to a dishwasher comprising a system for recognition of the fluid level of the washing fluid contained in the dishwasher, the fluid level recognition system having at least one capacitive filling level sensor having at least two probes, forming two capacitor plates, each operatively coupled to a sensor surface and projecting into the washing container for operative contact with the washing fluid, thereby using the washing fluid as a dielectric having a dielectric constant that changes with the fill level of the washing fluid, wherein at a first fill level the probes and the washing fluid form a capacitor having a first capacitance value indicating a first fill level and causing the filling level sensor to sense the first fill level and at a second fill level the probes and the washing fluid form a capacitor having a second capacitance value indicating a second fill level and causing the filling level sensor to sense the second fill level.

In this manner, the present invention provides a dishwasher with a system for filling level recognition which reliably determines the fluid level in the dishwasher without using moving parts and merely by using electronic components. As a result, the system for recognition of fluid level according to the invention is largely not liable to wear and contamination by deposited food residues. Since space no longer needs to be taken into account for mechanical devices, another advantage of the system for recognition of fluid level according to the invention is that it only requires a very small amount of space and thus can be accommodated almost arbitrarily even in inaccessible locations in the dishwasher. The system according to the invention further allows non-contact filling level recognition where the rinsing liquid and the filling level sensor do not come into contact, which will be explained in detail in the following description.

### **The Rejections under 35 U.S.C. § 103**

In the Office Action, claim 11-20 rejected under 35 U.S.C. 103(a) as being unpatentable over the Wennerberg et al reference (US. 3,539,153) in view of the Adamski et al reference (U.S. 4,982,606).

Applicants respectfully traverse this rejection.

Applicants respectfully submit that none of the applied references discloses or suggests the features of the claimed invention including a system for recognition of the fluid level of the washing fluid contained in the dishwasher, the fluid level recognition system having at least one capacitive filling level sensor having at least two probes, forming two capacitor plates, each operatively coupled to a sensor surface and projecting into the washing container for operative contact with the washing fluid, thereby using the washing fluid as a dielectric having a dielectric constant that changes with the fill level of the washing fluid, wherein at a first fill level the probes and the washing fluid form a capacitor having a first capacitance value indicating a first fill level and causing the filling level sensor to sense the first fill level and at a second fill level the

probes and the washing fluid form a capacitor having a second capacitance value indicating a second fill level and causing the filling level sensor to sense the second fill level, as recited in claim 11.

As explained above, these features are important for providing a dishwasher with a system for filling level recognition which reliably determines the fluid level in the dishwasher without using moving parts and merely by using electronic components, which is largely not liable to wear and contamination by deposited food residues, and which only requires a very small amount of space and thus can be accommodated almost arbitrarily even in inaccessible locations in the dishwasher. The system according to the invention further allows non-contact filling level recognition where the rinsing liquid and the filling level sensor do not come into contact.

The Wennerberg et al reference very clearly does not teach or suggest these features. Instead, the Wennerberg et al reference discloses three separate sensors (e.g., a low level sensor 26, a medium level sensor 28, and a high level sensor 30) that may be one of several types of sensors. The Wennerberg et al reference discloses that the sensors 26, 28, 30 can be capacitive sensors. Indeed, the Office Action specifically acknowledges that the Wennerberg et al reference discloses using multiple sensors for determine the height, not a single sensor.

In stark contrast to the teachings of the Wennerberg et al reference, in the claimed invention, the same probes are used in conjunction with the washing fluid to form a capacitor that has a first capacitance value indicating a first fill level and a second capacitance value indicating a second fill level.

For example, as shown in Figure 1, the same probes 8 of the present invention contact the washing fluid to form a capacitor having a first capacitance value indicating a first fill level and causing the filling level sensor to sense the first fill level, and at a second fill level the probes 8 and the washing fluid form a

capacitor having a second capacitance value indicating a second fill level and causing the filling level sensor to sense the second fill level.

The Wennerberg et al reference very clearly does not disclose or suggest these features. The Adamski et al reference does not remedy the deficiencies of the Wennerberg et al reference.

For example, as shown in Figure 1 of the present invention, the filling level sensor 4 has at least two probes 8. The probes 8 are each operatively coupled to the sensor 4 and project into the washing container for operative contact with the washing fluid. In this manner, the sensor 4 does not come into contact with the washing fluid or the rinsing fluid, and therefore, is not subject to wear and contamination by deposited food residues, etc.

In comparison, the Office Action relies on parts 50 and 52 of the Adamski et al reference for the alleged teaching of these sensor probes, as recited in independent claim 11. However, in rejecting dependent claim 15, the Office Action specifically acknowledges that the sensor surfaces 50 and 52 are isolated from the rinsing fluid by a fluoroplastic structure, which contradicts the Office Action's assertions with respect to independent claim 11. See page 5, numbered paragraph 9.

Applicants respectfully submit that, based on the explicit assertions in the Office Action, the Adamski et al reference fails to make up for the deficiencies of the Wennerberg et al reference with respect to independent claim 11. Thus, Applicants respectfully submit that the Office Action does not establish a prima facie case at least with respect to claim 11, which recites at least one capacitive filling level sensor having at least two probes, forming two capacitor plates, each operatively coupled to a sensor surface and projecting into the washing container for operative contact with the washing fluid.

Additionally or alternatively, Applicants respectfully submit that the Office Action fails to establish a prima facie case that the Wennerberg et al reference and the Adamski et al reference disclose all of the features of at least claim 15,



which recites that the filling level sensor and its respective sensor surfaces are isolated from the rinsing liquid by a selected one of a wall of the washing container and a structure other than a wall of the washing container.

For at least these reasons, none of the applied references discloses or suggests at least the features of the claimed invention including at least one capacitive filling level sensor having at least two probes, forming two capacitor plates, each operatively coupled to a sensor surface and projecting into the washing container for operative contact with the washing fluid, as recited in claim 11, and the filling level sensor and its respective sensor surfaces are isolated from the rinsing liquid by a selected one of a wall of the washing container and a structure other than a wall of the washing container, as recited in claim 15.

Moreover, none of the applied references discloses or suggests at least the features of the claimed invention including at least one sensor probe made of electrically conducting material is provided inside the washing container and an electromagnetic field can be formed between the sensor probe and the filling level sensor, wherein the electromagnetic field varies depending on the height of the liquid level or varies depending on the dielectric constant of the medium surrounding the sensor probe, as recited in claim 16.

As explained above, these features are important for providing a dishwasher with a system for filling level recognition which reliably determines the fluid level in the dishwasher without using moving parts and merely by using electronic components, which is largely not liable to wear and contamination by deposited food residues, and which only requires a very small amount of space and thus can be accommodated almost arbitrarily even in inaccessible locations in the dishwasher. The system according to the invention further allows non-contact filling level recognition where the rinsing liquid and the filling level sensor do not come into contact.

Applicants respectfully request withdrawal of this rejection.

**CONCLUSION**

In view of the above, entry of the present Amendment and allowance of claims 11-20 are respectfully requested. If the Examiner has any questions regarding this amendment, the Examiner is requested to contact the undersigned. If an extension of time for this paper is required, petition for extension is herewith made.

Respectfully submitted,

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